

# Claims

- [c1] 1. A cellular transformer comprising  
at least a first magnetic core having at least a first  
through hole therein for receiving at least a first sec-  
ondary winding having at least a first secondary turn and  
a primary winding having a plurality of primary turns,  
the at least a first secondary winding passing at least  
once through the at least a first through hole of the at  
least a first magnetic core so that a changing magnetic  
flux in the at least a first magnetic core may induce a  
secondary voltage therein,  
at least a first cellular insert passing through the at least  
a first through hole of the at least a first magnetic core  
having therein a plurality of through holes generally par-  
allel to the at least a first through hole of the at least a  
first magnetic core for receiving the primary winding,  
and  
the primary winding being wound through the at least a  
first cellular insert and through the at least a first  
through hole of the at least a first magnetic core to in-  
duce a changing magnetic flux therein,  
such that the plurality of primary turns is distributed  
generally equally among the plurality of through holes in

the at least a first cellular insert and  
the plurality of through holes in the at least a first cellular inserts guides and supports the plurality of turns of the primary winding.

- [c2] 2. The cellular transformer of claim 1 wherein the at least a first cellular insert is made of an insulating material.
- [c3] 3. The cellular transformer of claim 1 wherein the at least a first cellular inserts is continuous through the length of the cellular transformer.
- [c4] 4. The cellular transformer of claim 1 wherein the at least a first cellular insert is generally the length of the at least a first magnetic core.
- [c5] 5. The cellular transformer of claim 1 wherein the at least a first cellular insert is at least a first metal cellular insert and the at least a first metal cellular insert comprises a portion of the at least a first secondary winding.
- [c6] 6. The cellular transformer of claim 1 wherein the at least a first cellular insert is formed of metal tubing.